Update from the Utah Veterinary Diagnostic Laboratory (UVDL)

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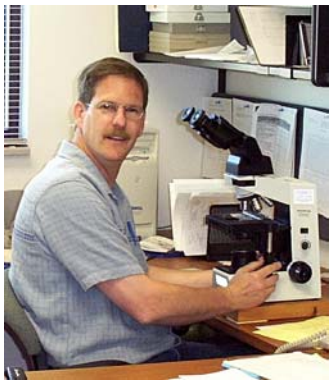
February 06

From the Director (Tom Baldwin)


Dr. Baldwin

It has been four years now since Drs. Mark C. Healey (Utah State University) and Michael R. Marshall (State Veterinarian) invited me to take the reins of the UVDL. Much has happened during these years, and the purpose of this letter is to provide Utah's veterinary practitioners a brief update on laboratory activities. Comments from section leaders follow my brief remarks, and a listing of current laboratory personnel concludes the update.

Facilities: Largely due to the combined efforts of personnel in the Department of Agriculture and Food and Utah State University, a new laboratory to serve the central and southern portions of the state has been constructed in Nephi. This top-quality facility houses serology, bacteriology and necropsy laboratories; the main lobby doubles as a meeting room designed for continuing education courses. The necropsy laboratory is complete with an incinerator, minimizing disposal issues (and creating the possibility of cremation services). I invite you to utilize this laboratory to its fullest potential.

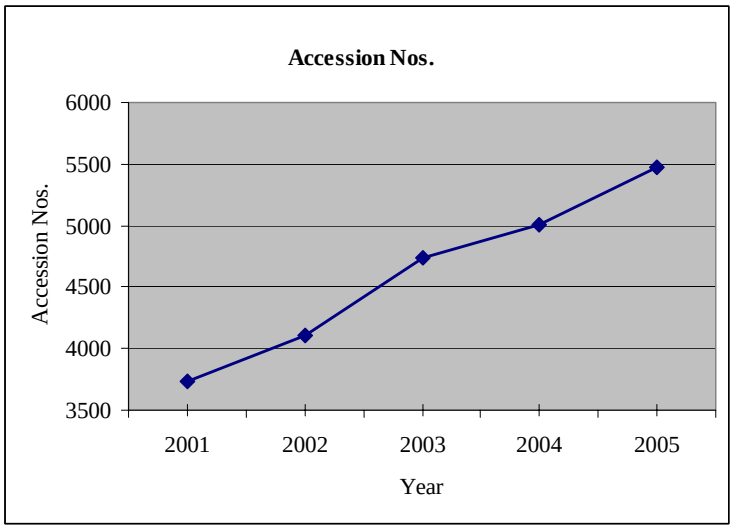

Dr. Cavender

Personnel: Perhaps this is the area where the most profound changes have occurred. In Logan, Dr. Ramona Skirpstunas arrived in 2002, as a second board certified pathologist. Beginning this year, Dr. Kimberly Cavender joined us as a pathology resident. Dr. Jessie Trujillo now heads the microbiology laboratories and Dr. David Wilson will unite with us later this spring as an epidemiologist and quality assurance /quality control (QA/QC) manager. Efforts are underway to secure a technician to assist Dr. Wilson in his epidemiologic and QA/QC duties. Another David, David Wheelwright, starts this March as an analytical chemist. In our branch laboratory, Analee Sessions replaced Nannette Fields in bacteriology, while Carla Brooks shoulders the responsibilities in the serology laboratory. In all, professional and staff members now number 17 (soon to be 18) individuals (up from nine in 2000).

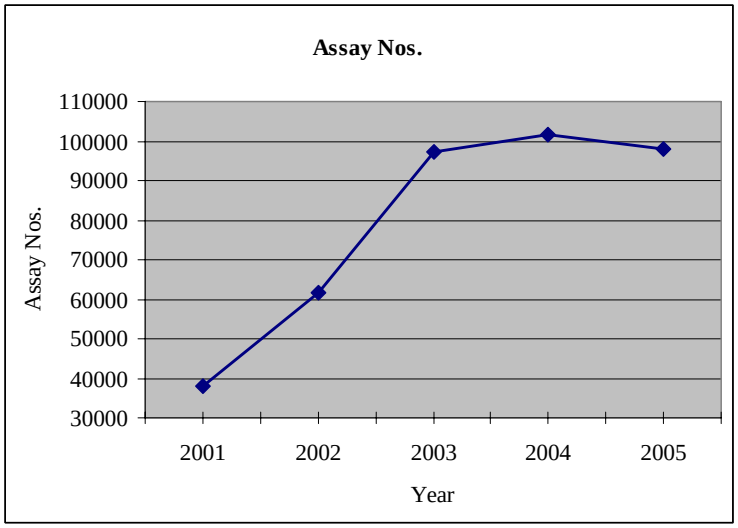
Assays: Additional diagnostic tests have accompanied the acquisition of personnel. Two completely new sections are now fully operational: molecular diagnostics and immuno-

histochemistry IHC). Hence, we can now test for Johne's disease in days versus months, and provide IHC distinctions between canine sarcomas of fibroblast origin versus those of skeletal muscle or vascular lineages. Additional assays are under development; if you have a particular need, please let us know.

With new personnel and assays, laboratory usage has increased sharply. This is demonstrated graphically for both numbers of accessions (a submission to the laboratory that requires one or more assays) and the total number of assays performed. We anticipate crossing over 6000 accessions in 2006.



Please note the laboratory web site provided above. All of the new assays now available are listed there. In addition, several minor fee changes go into effect in mid-March. The fee schedule provided on the web site is current.



As always, it remains our great pleasure to both interact and serve with the veterinary practitioners of Utah. We wish you all the best this coming year.

Toxicology (Dr. Jeff Hall)

I am pleased to report that assays for vitamins A and E are now available. With the acquisition of a chemist, assays for mycotoxins and specific insecticides will be offered shortly. As of now, mineral analyses continue to be the mainstay of the toxicology laboratory, but diversification is just around the corner.

Dr. Skirpstunas

Pathology (Dr. Ramona Skirpstunas)

Continued progress in development and implementation of IHC assays for both infectious diseases and tumor markers continues. Beverly Wareham, our histotechnologist, is busily adding and optimizing new assays.

Currently, IHC assays offered include canine parvovirus, canine distemper virus, feline panleukopenia virus, bovine coronavirus, bovine herpesvirus-1, bovine virus diarrhea (BVD) virus, *Chlamydophila* sp., scrapie, chronic wasting disease, and several tumor markers. We are working on IHC assays to identify *Toxoplasma* sp., bovine respiratory syncytial virus and parainfleunza-3

Our electron microscopy department, managed by Corey Wareham, provides service for both diagnostic and research needs. Both transmission and scanning microscopes are available for routine diagnostics and specialized projects.

<u>Microbiology (Dr. Jessie Trujillo)</u>

Dr. Trujillo

Losses to calf diarrhea continue to be high. In an effort to identify the causative agent(s), the following samples/diagnostic assays are recommended.

A. Live animals
    1. Feces placed into a red top tube or similar container
    2. Blood, EDTA (purple top) tube

    The feces will be screened for virus particles (electron microscopy), cryptosporidium sp. (special stained fecal smear), and cultured for pathogenic bacteria. The buffy coat will be harvested from the blood and screened for bovine virus diarrhea (BVD) virus by a combination of cell culture and polymerase chain reaction testing.

B. Dead animals
    1. Fresh tissues/materials
        a. Most important
            i. Feces from the small colon placed into a red top tube or similar container
            ii. Ligated loop of ileum placed into a whirl pack or equivalent bag
        b. Less important
            i. Liver, spleen, lung, kidney and mesenteric lymph node placed together in a whirl pack or equivalent bag

        Feces will be screened as above, except for cultures (performed on ileum). Other tissues will be stored (frozen) and utilized as needed.

    2. Fixed tissues
        a. Gastrointestinal track (all samples opened prior to immersion in formalin)
            i. Rumen, reticulum, omasum, abomasum, duodenum, jejunum (several pieces from different areas – pick the most red areas), ileum (most important of all), cecum and spiral colon. All these can go in the same container (the pathologist can tell them apart).
        b. Other tissues (no sample more than ¼ inch thick)
            i. Most important - lung, heart, liver, kidney
            ii. Less important – thyroid, adrenal gland, mesenteric lymph node, urinary bladder, adrenal gland and brain

A pathologist will examine the tissues (the number of tissues submitted doesn't increase the cost). If merited, IHC assays for coronavirus and BVD will be performed.
In an effort to reduce costs, two fecal screens are available. The comprehensive screen includes electron microscopy, cryptosporidium screening, aerobic culture including enrichment for *Salmonella* sp. and anaerobic culture; the cost is $25. The routine screen is similar to that described above, but without anaerobic culture; cost is $17.50.

Central Utah Branch (Dr. Jane Kelly)

As most of you know, we have not been running the *Brucella ovis* ELISA. This is because reagents provided recently by the National Veterinary Services Laboratory (NVSL) have yielded inconsistent results. Hence, we are participating currently with NVSL and laboratories in other states in a validation effort. When complete, the assay will again be offered and practitioners notified.

Central Utah Branch Laboratory

With bovine trichomoniasis testing underway, trichomoniasis media is available at the branch laboratory. Media can be picked up or shipped. The cost is $4/tube. If shipped, we recommend delivery through Federal Express. Shipping costs are the responsibility of the veterinary clinic.

A refrigerator for sample drop-off is available at 210 East 1230 North, Springville Utah. Pickup time is 7:00 a.m., Monday – Friday.

Current laboratory personnel

Main laboratory

Tom Baldwin	Director and diagnostic pathologist
Kimberly Cavender	Pathology resident
Jeff Hall	Toxicologist
Nancie Hergert	Technician, Molecular Diagnostics
Sara Hicks	Technician, Molecular Diagnostics
Caleb Larsen	Office manager
Michael Paskett	Technician, Microbiology
Ramona Skirpstunas	Pathologist
Jessie Trujillo	Microbiologist
Beverly Wareham	Technician, Histology
Corey Wareham	Technician, Electron Microscopy
David Wheelwright	Analytical chemist, Toxicology
David Wilson	Epidemiologist & QA/QC manager

Central Utah Branch Laboratory

Carla Brooks	Technician, Serology
Jane Kelly	Diagnostician
Analee Sessions	Technician, Bacteriology
Jessica Shepherd	Receptionist

All of us at the UVDL appreciate your patronage and look forward to continuing to serve veterinarians in the state of Utah.